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ABSTRACT

This study examined whether there are significant differences in the academic performance and graduation rates of undergraduate transfer students compared to students who entered the general campuses as first-time freshmen in selected 2- and 4-year campuses in Colorado. Four student cohorts were studied within three campuses (Boulder, Denver, Colorado Springs) of the University of Colorado system, and a comparison of their performance was made involving grade point average (GPA), mean term credit load, graduation rates, and retention/drop-out rates. Findings revealed that there are significant differences between the academic performance and graduation rates of in-state, first-time freshmen and transfer students. In comparison to the freshmen students who survived to their second year, the transfer cohorts: (1) had a lower graduation rate; (2) had a lower percentage attaining a 2.0 GPA or better in their first year; (3) took a lower student credit hour load; and (4) brought between 31 and 39 transfer student credit hours, while the surviving freshman cohorts brought a median of 30 credit hours to their second year on the Boulder campus and 27 credit hours at the Colorado Springs and Denver campuses. (GLR)

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**A Comparative Analysis
of the Academic Performance and Graduation Rates
of Freshmen and Transfer Students**

J. Alan Owen

University of Colorado
Office of Policy and Planning

May, 1991

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for Management Research, Policy Analysis, and Planning

This paper was presented at the Thirty-First Annual Forum of the Association for Institutional Research held at The Westin St. Francis, San Francisco, California, May 26-29, 1991. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

Jean Endo
Chair and Editor
Forum Publications Editorial
Advisory Committee

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A work of this nature is always a collaborative effort, and with this study too, there are a number of individuals who provided advice and technical assistance. While the author accepts full responsibility for the final product, these people were there at the right time to ask the hard questions or provide critical advice when it was needed.

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J. Alan Owen, Researcher
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April, 1991

EXECUTIVE SUMMARY

Background

Both demographics and state education policy have worked to encourage the University of Colorado to enroll more undergraduate transfer students. In 1986, mandated by state legislation, the Colorado Commission on Higher Education (CCHE) adopted admission standards which apply to all four-year institutions within the state. These admission standards encompass both freshman admissions and undergraduate transfer admissions. Transfer as a means of entry into the four-year and university sector is encouraged by these standards. While the CCHE admissions standards for first-time freshman are rigorous and vary by institution based on role and mission, the admission standard for transfer students with at least 30 transfer credits is a simple 2.0 grade point average.

This study examines whether there are significant differences in the academic performance and graduation rates of undergraduate transfer students compared to students who entered the general campuses of the university system as first-time freshmen. Since prior studies indicated that out-of-state first-time freshmen perform differently than in-state first-time freshmen, this study is limited to in-state first-time freshmen and transfers from public in-state two-year and four-year institutions.

Findings

The results of the analysis indicate that there are significant differences between the academic performance and graduation rates of in-state first-time freshmen and transfer students from Colorado public two and four-year institutions. This study differs from traditional student retention and graduation analyses which track students from their matriculation. Because national statistics¹ verify that a relatively large proportion of students drop out during their first year of higher education, it seemed misleading to compare the retention and graduation rates of freshmen with no higher education experience to transfers who had prior experience. To adjust for this phenomenon, this study compares the performance of "native" freshman students who have survived to their sophomore year to the performance of transfer students.

The results of the study show that in comparison to freshmen students who survive to their second year, the transfer cohorts:

¹ In 1983, the American College Testing (ACT) Program provided an analysis of all colleges' and universities' freshmen to sophomore attrition rates. The overall attrition rate was 32%, while the rate for BA/BS, MA, and PhD students at public institutions was only slightly lower, at 29%. Table 1, page 5 of Noel, Levitz, Saluri, and Assoc., Increasing Student Retention, 1985, Jossey-Bass, San Francisco.

- have a lower graduation rate;
- have a lower percentage attaining a 2.0 GPA or better in their first year;
- take a lower student credit hour load;
- bring between 31 and 39 transfer student credit hours, while the surviving freshman cohorts bring a median of 30 credit hours to their second year on the Boulder campus and 27 credit hours at the Colorado Springs and Denver campuses.
- perform nearly as well after the 1st year at CU.

INTRODUCTION

Transfer, both from the community college sector and from other 4-year institutions, is becoming an increasingly important means of entry into the undergraduate programs at the University of Colorado. The demographics of post-secondary education in Colorado will further stimulate student transfer from community colleges into 4-year institutions.

Over the last five years, community college enrollment has seen a 42% increase, and undoubtedly some of this increase will feed into the four-year sector and result in increased demand for transfer from the two-year sector into the four-year sector. This phenomenon is observed on the national level by Anthony DePalma²:

"Community colleges have proven to be important routes to higher education, especially for women and members of minority groups, many of whom transferred to four-year institutions after receiving their associates' degrees from two-year colleges....The trend toward the local colleges may be intensifying. From 1988 to 1989, the size of the freshman class grew 10 percent at community colleges but fell 1 percent at traditional schools."

At the Denver and Colorado Springs campuses³, transfer students have always

² DePalma, Anthony, New York Times, January 23, 1991.

³ The University of Colorado is composed of four unique campuses, each of which has a distinct role. The Boulder campus, with a Fall 1990 headcount of 25,176 students, is a comprehensive graduate research university, largely comprised of what is understood to be the "traditional" student population. CU-Denver has a headcount enrollment of 10,613 and serves the urban student and community with programs particularly sensitive to their needs. The Colorado Springs campus of 5,983 has a high representation of non-traditional students and provides programs to southern Colorado, distinguishing itself in space and electronics research. For this study, only data from these three general campuses were used, although the CU-System's fourth campus, the CU-Health Sciences Center, has a headcount of 1,704 students in its School of Medicine, Dentistry, Nursing, Pharmacy and Graduate school.

outnumbered first-time freshman as an entering cohort. In addition, the transfers provide the larger part of the minority populations at these two campuses. In 1989-90 the Denver campus matriculated three times as many transfer students as freshmen -- 1,710 new undergraduate transfers compared to 557 new freshman students. The Colorado Springs campus matriculated twice as many transfers as first-time freshman students in the 1989-90 academic year---943 transfers compared to 446 freshman. The Boulder campus matriculated twice as many freshman students as transfers. However, because of Boulder's size, this still amounted to 1,777 matriculated undergraduate transfers in the summer and fall terms of the 1989-90 academic year. This high number of transfer students entering the University makes it essential that we understand better the persistence and graduation patterns of these students and how they compare to first-time freshman students.

PURPOSE AND SCOPE OF THE STUDY

The purpose of this study is to determine if there are significant differences in the academic performance and graduation rates of undergraduate transfer students compared to students who entered the general campuses of the university system as first-time freshmen. Since previous studies indicated that out-of-state first-time freshmen differ from in-state first-time freshmen in their retention and graduation rates, this study is limited to in-state first-time freshman and transfer students from public in-state two-year and four-year institutions.

Several previous cohort studies have focused on the dropout and graduation rates of first-time freshman. Very little analysis has been performed, however, on transfer students as a group or in comparison to freshman students. A major reason for this lack of attention has revolved around the inherent definitional problems. Vincent Tinto⁴ summarizes the difficulties surrounding definitions as follows:

"No one definition of dropout is likely to capture entirely the complexity of its appearance in higher education. Researchers and institutional officials have to choose with some care the definitions that best suit their interests and goals."

How do you define a cohort of transfer students and what subset of first-time freshman students can you compare this cohort against? The results of any analysis will vary widely depending on how you treat the attrition in the freshman student cohort from first to second year at the institution. Clearly transfer student cohorts have

⁴ Pascarella, Ernest T., Editor Studying Student Attrition, Number 36, December 1982 Jossey-Bass, Inc., San Francisco, CA.

experienced this kind of attrition, only at another institution. This analysis begins with a careful specification of cohort membership and then compares the academic performance and graduation rates of students who entered the three general campuses as first-time freshman with those who entered the system as transfer students. The study differentiates between transfers from the public community college sector within the state and other public four-year institutions.

DATA BASE AND METHODOLOGY

There is no single, clear-cut methodology for studying retention and graduation rates of students at an institution of higher education. In most cases, it is the goals and aspirations of the institution which determine the format and content of such a study, and those can range from focusing on a single institution, to varying ways of designating cohort groups, or defining the duration of the study in such a way as to make the methods incomparable. Consequently the ability to generalize from other studies of retention and graduation rates of freshmen and transfer students has been limited. In his work on completers, persisters, stop-outs and drop-outs⁵, Porter encountered these definitional compatibilities and summarized the concerns by asking: "Just what is meant by persistence? Is it degree completion, or continuous enrollment? is it measured by the year, by the semester, by the month?"

These questions point clearly to the problems inherent in studies of this nature when comparing data regarding student persistence and success between institutions. This study is no different than others in as much as the definitions and methodology are peculiar to the University of Colorado and unique to the questions it set forth at the study's inception.

For the most part, institutions study drop-out and retention of students to enhance their ability to retain students. As Vincent Tinto⁶ points out, however: "Not all forms of student departure deserve the label "drop-out." Nor do they all require institutional action." Among transfer students, a stop-out is a frequent occurrence and transfer study conclusions as well as any resulting institutional policies have to be framed with this knowledge well in mind.

The University of Colorado has recognized for some time that the transfer student is a key part of its enrollment picture. This, in addition to the changing demographics, has made the transfer student an increasingly important component of the university's

⁵ Porter, Oscar F., Undergraduate Completion and Persistence at Four-Year Colleges and Universities, National Institute of Independent Colleges and Universities, 1987-89.

⁶ Tinto, Vincent, "Dropping Out and Other Forms of Withdrawal", Increasing Student Retention, Jossey-Bass, San Francisco, 1985, p. 28.

enrollment profile. What has not been as readily known is how the transfer student has performed in comparison to native freshman students who have entered the university through the traditional means, as freshmen right out of high school.

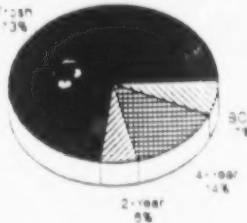
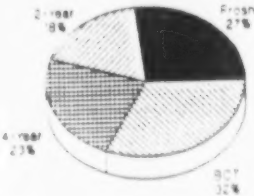
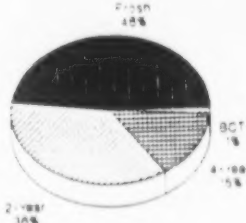
This study then, compares the performance of first-time in-state students who matriculated at a CU campus with those who entered the University of Colorado as transfer students. The University of Colorado enrolls a substantial number of transfer students from both 2 and 4-year institutions in Colorado. In addition to comparing the academic performance of transfers to students who entered the institution as freshmen, we also compared the performance of transfers from the community college sector to transfers from other 4-year institutions in Colorado. Because of the difference in student retention rates when comparing in-state undergraduates to out-of-state undergraduates, only in-state students were examined in this study.

A major challenge of the study was to create similar student cohorts for comparison purposes. The transfer students were selected from the Fall 82 census date student files. New freshmen were selected from Fall 81 and tracked to the Fall 82 census file. The study then used the surviving freshmen to establish the freshman tracking cohort. This technique was necessary in order to make the cohort groups more homogeneous with respect to age and to ensure that the cohort groups had similar prior higher education experience as measured in student credit hours (SCH). This process made the comparisons, and specifically the retention data, more comparable. Students with fewer than 10 SCH or more than 70 SCH at Fall 1982 census date were removed from the cohort groups to eliminate the potential of outliers skewing results. The limitation of this methodology is that the retention study starts the measurement after one+ year of higher education experience for each of the groups. However, it was felt that this technique was justified to balance the comparisons between the freshmen and the transfers.

The transfers were further divided into three cohorts, those coming from 2-year in-state community colleges, those coming from 4-year degree granting universities or colleges within the state, and finally those students who transferred between campuses within the University of Colorado system. These categories allowed us to measure how the surviving freshmen compared with each type of transfer cohort.

Table 1 on the following page presents the composition of the cohorts:

Table 1

<u>Residents Only</u>	<u>Fall '81 Census</u>	<u>Fall '82 Census</u>	<u>After Removing Credit <10 & >70</u>	<u>Fall '82 EOT⁷</u>
BOULDER				
Freshmen	1,821	1,407	1,401	1,390
All Transfers				
2-Yr. CC		113	96	94
4-Yr. Col/U.		280	241	236
BCT ⁸		136	81	79
				
DENVER				
Freshmen	302	178	167	159
All Transfers				
2-Yr. CC		121	91	89
4-Yr. Col/U.		157	119	115
BCT		213	105	99
				
COSPRINGS				
Freshmen	292	178	165	160
All Transfers				
2-Yr. CC		135	106	97
4-Yr. Col/U.		55	47	46
BCT		5	3	3
				

Having established four student cohorts for each campus, the study set out to compare their performance based on the following criteria:

Grade Point Average (GPA)
 Mean Term Credit Load
 Graduation Rates
 Retention/Drop-out Rates

The study tracked student term GPAs as one performance variable, and separated students into those records with a GPA greater than or equal to 2.0 and those with less than a 2.0 GPA.

⁷ End-of-Term

⁸ Between Campus Transfers - This transfer cohort is comprised of students who have transferred within the CU-System in two different situations: those transferring to and from the Boulder, Colorado Springs and Denver campuses, and those who move from non-degree status to degree status within a campus.

Student mean term credit load was tracked as a second performance variable. This allowed analysis of the differences in the average credit hours taken each term between cohorts.

FINDINGS

GPA Performance (Term GPA)

This study analyzed student GPA by focusing on the percentage of GPAs above 2.0. Traditionally, the 2.0 GPA is the demarcation between success and failure in student performance. "Good academic standing" in most undergraduate schools and colleges of the University of Colorado requires a 2.0 grade point average.

In general, during their first year at CU, a smaller percentage of transfer students earned above a 2.0 GPA than students who had started out as freshmen at CU. Transfer students from 4-year institutions, however, who transferred into both UCD and UCCS performed nearly as well as students who had entered the institution as freshmen. This concurs with the 1983 findings of Holahan, Green, and Kelly⁹ who also examined transfer student performance. Their study compared three groups of students. The transfers from 2-year institutions, transfers from 4-year institutions, and native (comparable to our freshmen terminology) students. The authors found that transfers from 4-year colleges/universities obtained a higher GPA than native students, who in turn obtained a higher GPA than transfer students from junior colleges.

We also found, however, that this is not a permanent condition, and that by the beginning of their second year at CU, transfer students had essentially caught up with "native" students as measured by their GPA. These findings again, are consistent with a 1979 study, by Sloan and Farrelly¹⁰ when they conclude that: "the differences between students disappeared the longer the students remained at the senior institution." The one exception is made up of the 2-year transfers into UCCS. Since most of these students come from Pikes Peak Community College, this phenomenon suggests the need for further research.

For the following general observations on performance, we only recorded the GPA data for Fall 82 through Spring 86 because the number of students still enrolled after Spring 1986 drops to the extent that the data are not comparable to earlier terms:

⁹ Phillipi, Raymond, The Attitudes and Performance of Transfer Students at Graduation, AIR Presentation, Louisville, KY., May 1990.

¹⁰ Phillipi, Raymond H., The Attitudes and Performance of Transfer Students at Graduation, AIR Presentation, Louisville, KY., May 1990.

- At Boulder, the percentage of students earning a greater than 2.0 GPA in the first study year ('82-83) is higher for surviving freshmen at 83% than for transfers at 68%. In the Fall of 83 the percentage of students receiving a 2.0 GPA or better is nearly equal among transfers (all types) and surviving freshmen at roughly 83%. After that term, the percentages of all types of transfers achieving a 2.0 GPA or better fluctuates from 72% to 90%, while the surviving freshmen percentages stay relatively stable at or around 84%.
- At Colorado Springs in the Fall of 82, the surviving freshmen cohort and the transfers from 4-year institutions cohort have a significantly higher percentage, 79% and 80% respectively, than the 2-year community college cohort which has only 69% sustaining a 2.0 GPA or better. On average, this difference between cohorts remains consistent and increases slightly over time. The BCT cohort at Colorado Springs is not large enough to be significant and therefore is not discussed in this context.
- At Denver, the 4 cohorts are closely grouped at or near 80% sustaining a 2.0 GPA or above. There is some movement by each cohort, but as a set they are the most consistent over time.

Credit Load Summary

Student credit load behavior has a significant impact on when students graduate. This analysis compared the average credit load for students who entered the institution as freshmen to those entering as transfer students. In general, transfer students took lighter loads during their first year at CU. However, in the succeeding years, 4-year transfer students and BCTs took loads which were very close to those taken by students who had entered as freshmen. In contrast, two-year transfer students took significantly lighter loads than "native" students and four-year transfers throughout their college career.

At Boulder, at 14.3 hours, credit loads are higher for the new freshmen than for the transfer cohort groups which have an average of roughly 12.5 credit hours. These load differences remain fairly constant until the Fall of 1985 when attrition and graduation rates reduce the number of continuing students to the extent that the data are no longer meaningful.

At Colorado Springs, the credit loads are initially higher for freshmen (12.0 credit hours) and 4-year college transfers (11.4 credit hours) than for 2-year college transfers (10.0 credit hour average). The credit loads for surviving freshmen, 2-year and 4-year transfers become roughly equal after 3 years.

At Denver, with an average of 11.5 credit hours, loads are highest for new freshmen and 4-year college transfers. The credit loads for the 2-year college transfers (8.4 hours) and the BCTs (9.3 hours) remain lower for most of the terms monitored. The BCT-Colorado Springs cohort fluctuates widely due to their small number.

We have only recorded the credit load data for Fall 82 through Spring 86 because the number of students still enrolled after Spring 1986 drops to the extent that the data are meaningless.

Graduation Rates and Student Retention

For the purpose of this study¹¹, the ultimate indicator of the successful academic performance of transfer student and surviving freshman cohorts is, whether the student eventually graduates. Student grade point average, credit load and other useful indicators provide insight into the students' progress, nevertheless, the culminating event is student graduation. In this context, there are three categories into which all students in this study fall:

1. graduated -- the student has successfully completed undergraduate study and graduated;
2. here -- has not graduated, but is currently enrolled; and
3. not here -- has not graduated and is currently not enrolled.

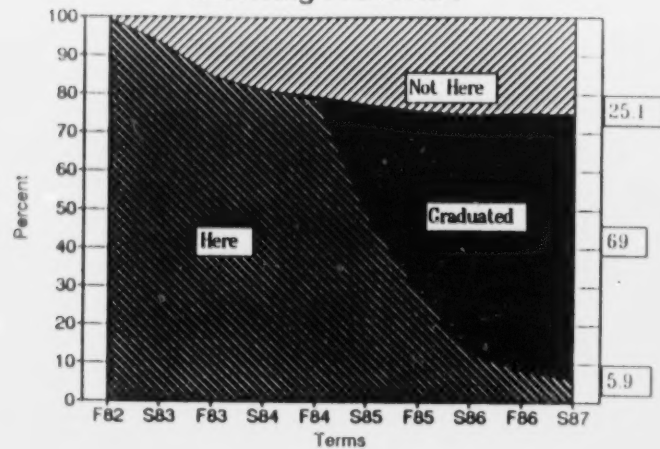
Because the study tracks students by term, returning students who stopped out are accurately reflected as "here" for the terms they were enrolled and "not here" for the terms in which they were not enrolled.

The tables on the following pages provide the reader with detail about these three student "states" on a campus by campus basis. Reference to the appropriate table should be made when reading the comments and the summary analysis.

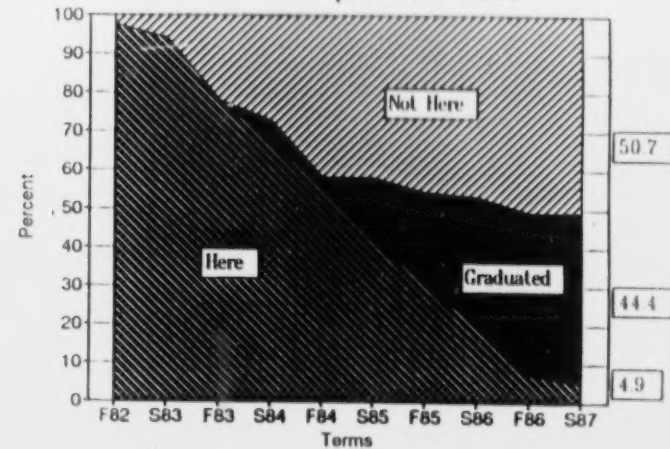
¹¹ Note: As was explained in the methodology, the purpose of this analysis is to compare transfers with surviving freshmen. Both cohort groups have prior higher education experience, and hence the reader must keep in mind that the graduation rates do not reflect the cohort group's overall graduation performance beginning with their initial entry into higher education, but rather their rate measured after at least one year of higher education experience. The graduation rate of transfers can only be measured after they enter the institution, or expressed another way, the drop-out rate of transfers prior to entering the institution is unknown and unknowable. For the freshman cohort, we do know the drop-out rate in their first year, but for the purpose of comparability we chose to compare only the surviving freshmen (sophomores) with the transfers.

University of Colorado at Boulder Cohort Performance

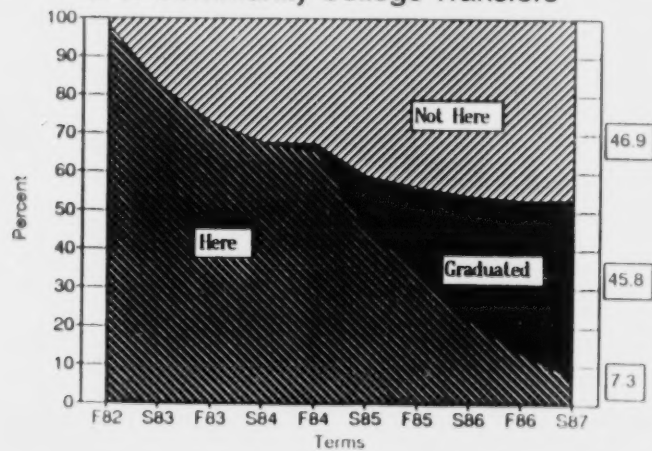
Surviving Freshmen



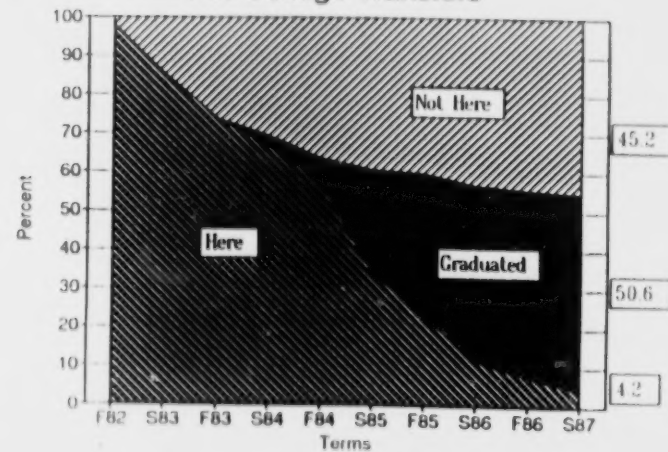
Between Campus Transfers



2-Yr Community College Transfers

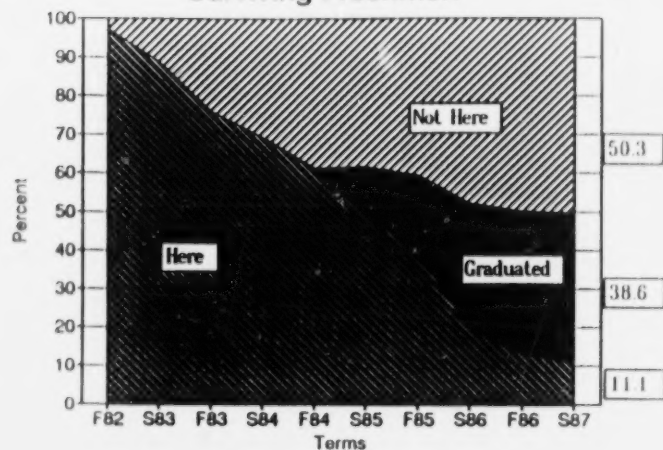


4-Yr College Transfers

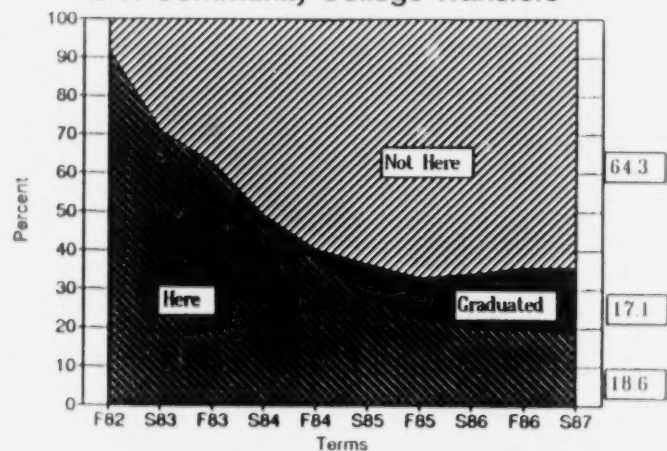


University of Colorado at Colorado Springs Cohort Performance

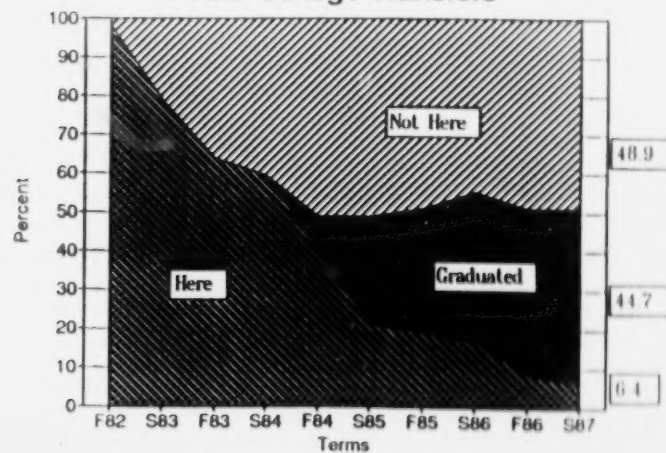
Surviving Freshmen



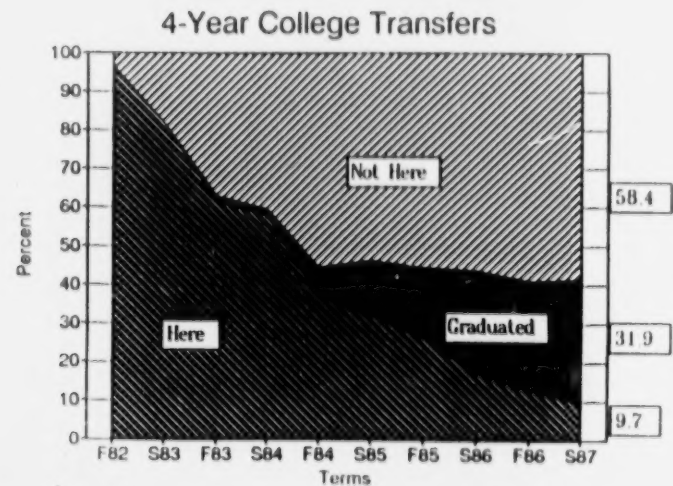
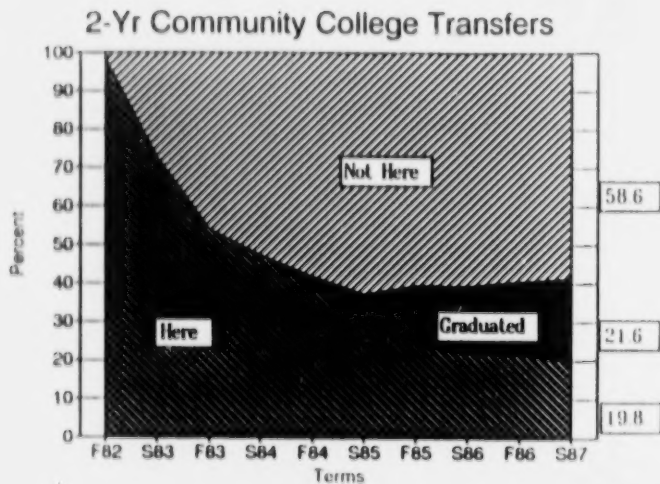
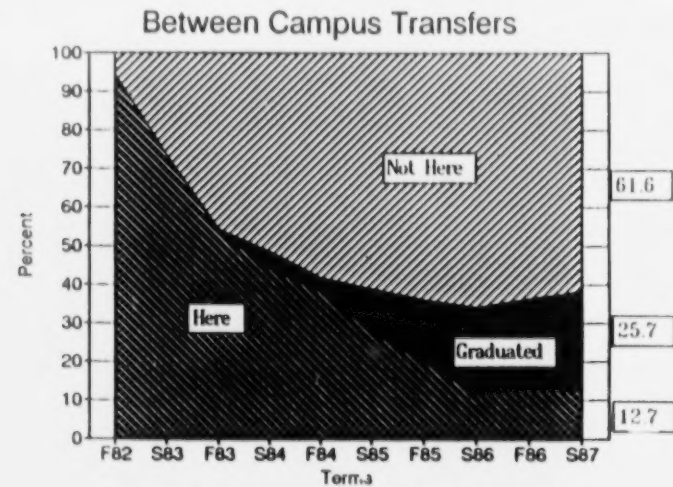
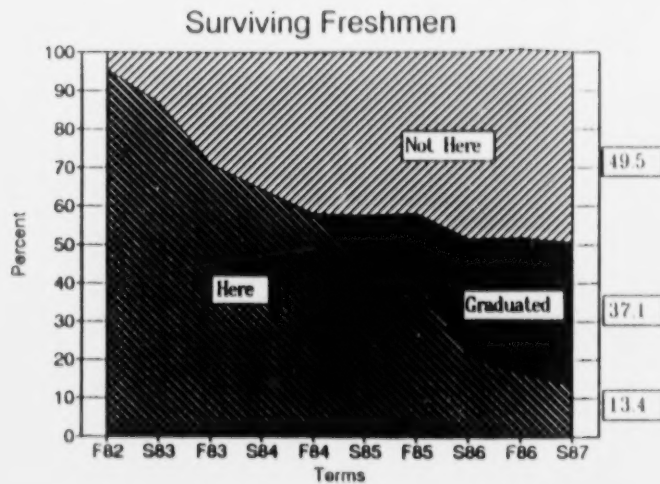
2-Yr Community College Transfers



4-Year College Transfers



University of Colorado at Denver Cohort Performance



There are significant differences in the proportion of students within these three categories among campuses and among the various cohorts of transfer students.

Not unexpectedly, the surviving freshman cohort at the Boulder campus exhibits the highest graduation rate of all the cohorts -- 69% graduated and the lowest percentage of still "here" -- 5.9% to 7.3%. This pattern is consistent with the traditional character of the undergraduate student body at the Boulder campus.

All cohorts at the Denver campus, with the exception of the 4-year college transfer cohort, and the two-year transfer cohort at the Colorado Springs campus show a much higher proportion of students who were still "here" by the end of the study. This is, in part, a reflection of the more non-traditional character of the student bodies at Denver and Colorado Springs, where a much higher percentage of the students are enrolled in part-time and second career studies. Never-the-less, fully 20% of the 2-year community college transfers to the Denver campus were still enrolled in the Spring of 1987, five years after they had transferred to CU-Denver. Similarly, 19% of the 2-year Community college transfers to the CU-Colorado Springs campus were still enrolled by the end of the study period. The 4-year college transfer students have a very similar pattern to that of the surviving freshman. The 2-year transfers perform differently. By the end of the study, these cohorts have the highest "not here" proportion, the highest "here" proportion and the lowest "graduated" proportion.

Conclusions

This study indicates that there are some significant differences in performance between transfer students and students who entered the institution as freshmen and survived to their second year. This is important information, but the real issue is not highlighted until we ask: "What do these differences mean to the University of Colorado as an institution as it has to set and implement policies regarding enrollment, admissions, and retention?"

Several steps have been taken to facilitate the movement of transfer students from the community colleges into the University of Colorado. In the mid-1980's the state of Colorado through the Colorado Commission on Higher Education and the master plan for higher education made a commitment to access and quality for the community college system. They mandated that the 4-year institutions make "articulation agreements" with the community colleges that would identify course by course equivalency and describe and facilitate the transfer process. These "articulation agreements" as a concept have been in higher education for several years and have been successful in many states such as Florida, California, Texas, and others. While Colorado, as a state, has been a late comer in the use of this kind of instrument, the University of Colorado has been very active over the last three years in developing and implementing articulation agreements.

All of the campuses of the University of Colorado have worked vigorously to complete articulation agreements with the community colleges in their area, with an ultimate goal of having such agreements with all community colleges statewide. UCD has signed articulation agreements with five of the Denver metro area community colleges. The essence of these agreements, while each remains independent of the other, is that UCD identifies a core curriculum to satisfy their undergraduate requirements. These agreements are working documents in as much as they are reviewed and revised annually. UCD then agrees to accept these core transfer credits and up to 60 credit hours toward a degree at UCD. Currently UCD is working on articulation agreements with two more state community colleges, Pikes Peak CC in Colorado Springs, and Colorado Mountain College in Glenwood Springs.

The Colorado Springs campus of the University of Colorado (UCCS) has also signed articulation agreements with five area community colleges. These agreements provide course by course equivalency and core curriculum requirements for the purpose of helping prospective transfer students. In addition, UCCS is planning to place a half-time advisor at Pikes Peak Community College (PPCC) to help prepare prospective transfer students. This allows the students to maximize the validity of their transfer credits and eases the adjustment of entry into the university at Colorado Springs. The rationale for this special action is that PPCC supplies a very high proportion of UCCS transfer students.

The Boulder campus also has articulation agreements with many of the community colleges and, in fact, may have agreements with all 15 community colleges in the state by the end of the year. These agreements, again, are working documents which are revised yearly to identify course by course equivalency and core curriculum requirements. Additionally, UCB has initiated special training sessions for the community college counselors to help them advise students more effectively on what is required of a transfer student. Preliminary feedback at UCB is, that the transfer students are more prepared and have a better sense of what is expected of them at the university than in the past.

The implementation of the articulation agreements will certainly help transfer student access to the university; has indeed already accomplished that. However, the issue of performance has not been addressed with these contracts. To some degree, better information and counseling will help the transfer student, and course by course equivalency will obviously facilitate successful completion of core curriculum requirements. This, in turn, may help transfer students become more competitive, resulting in higher levels of performance. That issue, however, was not the primary thrust of the articulation agreements which, instead, chose to focus on the question of access and transferability of courses.

My recommendation, with regard to increasing the level of transfer student performance, is to pursue a path similar to the one taken at UCCS, where a program

of individual student counseling and advising will be instituted, precisely with the expectation of enhancing the students' performance. Aubrey Forrest supports this viewpoint in the book Increasing Student Retention¹² when he states that:

"Probably the single most important move an institution can make to increase persistence to graduation is to ensure that student receive the guidance they need at the beginning of the journey through college to graduation."

This early guidance, orientation and articulation of educational goals has been shown to be an effective way to increase the success rate of all students¹³, and it is valid to assume, that the lower success in the performance levels of transfer students which was revealed in this study, could also be raised significantly. Based on those findings, I believe that a well-developed program, adequately funded and staffed, should rate foremost in the University's efforts to improve transfer student performance and retention levels. Coupled with the course equivalence and core curriculum agreements already in place, an intensive counseling program should prove to be immensely functional in lowering the drop-out rates and in increasing the graduation rates of transfer students. Such results, obviously, would be beneficial to the students and to the institution of higher education.

¹² Forrest, Aubrey, "Creating Conditions for Student and Institutional Success", Increasing Student Retention, Noel, Levity, and Saluri Assoc., ed., Jossey-Bass Publishers, San Francisco, 1985.

¹³ College Outcomes Measures Program Study, Increasing Student Retention, Jossey-Bass, San Francisco, 1985, p.65.